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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/709,095

Applicant(s)

BELKNAP, WILLIAM R.

Examiner

Vincent Boccio

Art Unit

2158

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE, AMEND & RESP OF 6/1/09 & 4/22/09.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 46-83 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 46-83 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Page No(s)/Mail Date _____

DETAILED ACTION

The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 2158

Response to Arguments

1. Applicant's arguments filed 4/22/09 & 6/1/09 have been fully considered but they are not persuasive.

In re page 7 applicant states, "The Office Action, however, asserts that Chiba, Morimoto and Takahashi, when combined, teach all the elements of claims 1-3, 6-8, 10 and 12-14. In addition, the Office Action asserts that Chiba, Morimoto, Takahashi and Aotake, when combined, teach all the elements of claims 9 and 11-13. Finally, the Office Action asserts that Chiba, Morimoto, Takahashi and Tonomura, when combined, teach all the elements of claim 15. Applicant's attorney disagrees. The Chiba, Morimoto and Takahashi references, taken individually or in combination, do not teach or suggest the limitations of Applicant's independent claim 1 directed to "updating one or more user or private data fields of one or more scene-change frames of the video stream to indicate that a scene change occurs in the scene-change frame and to indicate the scene change's type, in a manner that does not affect encoded content within the frames."

Instead, the references merely describe the following: In Chiba, **frames are marked to indicate a scene change, but the frames do not indicate the scene change's type.**

and

"To establish a prima facie case of obviousness, one of the legally required criteria is that there must be some suggestion or motivation to combine and/or modify the references, and the combination must show all of the claim limitations. See MPEP 52143. Applicant's attorney believes that there can be no motivation to combine and modify Chiba, Morimoto and Takahashi

in the manner suggested to show the limitations recited in Applicant's independent claim 1."

2. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

3. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

4. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

5. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or

modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case the combination is deemed to meet all recited limitations, is deemed feasible, one skilled in the art, would have no trouble updating at least one or more bits to indicate scene change type, as taught by Chiba (UPDATING BITS), using VARIOUS KNOWN detectors as taught by the prior art, it is deemed obvious to try, HAVING ALL TECHNICAL FEATURES, DEEEMED KNOWN AND OBVIOUS TO THOSE SKILLED IN THE ART, TO COMBINE WHAT IS TAUGHT TO ARRIVE AT THE CLAIMED INVENTION.

The combination of Chiba, Morimoto and Takahashi mark one or more user or private data fields of one or more scene change frames and with respect to Chiba, see page 5,

"If the difference is larger than the detection condition (the standard value of the code amount difference), the scene determining unit issues a COS code indicating a scene-changed frame and sets a selection signal in an active state. A switch adds the COS code to the encoded data in the percent frame and externally outputs it when the selection signal indicates an active state."

Chiba, col. 17 etc...

(43) FIG. 20 is the block diagram indicating the principle of the scene change recording/regenerating device.

(44) ***The scene change*** recording/regenerating device comprises a mark signal converting unit 95 for converting a scene change detection signal outputted by ***the first, second, third, or fourth scene change detecting device 1500, 1600, 1700, or 1800 to a mark signal indicating a change of scenes*** and outputting it, an image recording unit 96 for, when recording image data, adding a mark signal outputted by the mark signal converting unit 95 ***to a corresponding image data***, an image regenerating unit 97 for regenerating the image data recorded by the image recording unit 96, an image extracting unit 98 for extracting only the image data provided with a mark signal from the image data regenerated by the image data replying unit 97, and an image display unit 99 for displaying image data extracted by the image extracting unit 98.

(45) FIG. 21 is the block diagram indicating the principle of another scene change recording/regenerating device.

(46) The scene change recording/regenerating device comprises a high-speed image regenerating unit 101 for regenerating image data to be regenerated after extracting frames at a predetermined rate, an image display unit 102 for displaying image data regenerated by the high-speed image regenerating unit 101, a scene change detecting unit 103 for detecting a change of scenes in the image data after being frame-extracted and regenerated by the high-speed image regenerating unit 101, and a signal converting unit 104 for converting a detection signal outputted by the scene change detecting unit 42 to a regeneration stop signal to be outputted to the high-speed image regenerating unit 101.

In conclusion the examiner fails to agree that Chiba fails to disclose the claimed features, detecting scene change and marking corresponding frames.

In addition, there is no persuasive argument that the recited private or user data fields is not met by Chiba, there is marking and the recited,

- o user or private fields, but there is no more narrowing language to define over Chiba, as deemed by the examiner.

Chiba is deemed to read on and meets the limitation by marking image data with scene change marks, to meet the claim language of or be referred to as: User or Private, fields or areas.

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See Chiba,

Col. 41,

Detailed Description Text - DETX (283):

A picture signals 300 in total shown in FIG. 65 indicate a sequence (a series of frame image data) of animation. The picture signals 300 are, as with encoded data groups 130 and 140, provided with an SOM signal as a header and a trailing EOM signal. Between the SOM signal and the EOM signal, picture signal area 300-0, 300-1, 300-2, 300-3, . . . 300-n-1, or .300-n is provided for storing image data in each frame. In each picture signal area 300-i ($i=0, 1, 2, 3, \dots, n-1, n$), only a frame number 300-ia and image data 300-ib of the frame are stored (refer to picture signal area 300-3 in FIG. 65) if no change of scenes have been detected. **On the other hand, if a change of scenes has been detected, a frame indicating a change of scenes stores, in addition to frame number 300-ia and the image data 300-ib of the frame, mark signal 300-ic between the above described data (refer to picture signal area 300-0 in FIG. 65).**

In accord to Fig. 65 frames are encoded with a Mark along with the EACH FRAME IS PROVIDED WITH AN 300 HAVING MULTIPLE FIELDS:

- o "fields a/per frame", an area/field for storing:
OO frame numbers,
- o "fields c/per frame", an area/fields for storing:
OO the corresponding scene change marks,
and
- o "fields d/per frame", an area/field for storing"
OO the corresponding image data/video or an image
data area/field

Since the marking is of header of image data in accord to areas set fourth, there is deemed to be transparent to image content as the frame numbers are deemed to be, because the fields used are deemed header areas outside the actual image data area or field, it is still noted that these areas are deemed to reasonable read on the claimed USER or Private fields or areas.

Headers areas of frames, is deemed conventional and well known in the art to store additional data, as is deemed conventional in the art.

To support the primary examiner's assertions:

In accord to applicant Specification Page 5:

The video file 130 may be compressed into, for example, a Motion Pictures Experts Group (MPEG) format, while retaining the frames with marked fields (e.g., data fields) representing scene changes. Thus, the video file 130 may include full frames 132 and "delta" frames 134. A delta frame 134 includes a portion of a full frame 132. For purposes of illustration, in FIG. 1, a full frame 132 is illustrated as a shaded frame, whereas a delta frame 134 is illustrated as a non-shaded frame. The frames of the video stream 110 may include a field 136. The field 136 may be a user data field. In an alternative embodiment of the present invention, the field 136 may be a private data field. The following description refers to user data fields, although private data fields or other fields could also be utilized. Thus, for one embodiment of the invention, each full frame 132 and each delta frame 134 includes user data fields 136. Typically, there are multiple user data fields 136, and these user data fields 136 are used for various purposes. For example, conventional systems use the user data field to store closed captioning information. In addition to this data, the scene change marking system 126 can also utilize the user data field 136 to update frames which represent scene changes with scene change....."

In applicant's Fig. 1, field 136 of frame 132 which appears to be a header for the frame, as appears in Fig. 65, being what also appears as a header field or area set fourth for storing additional data stored in the header area of the frame.

Morimoto is provided mainly for teaching, processing of video in MPEG format, associated CD-ROM media (col. 1) by a

computer platform (col. 4, lines 39-49), as taught by
Morimoto.

It is noted that the claims do not recite video in the MPEG standard, although in view of Morimoto would have been obvious, but not recited in the claims.

Further conclusion, Morimoto also has been provided to render obvious in view of the MPEG standard an area referred to as, "USER DATA FIELD"

6005643

Brief Summary Text - BSTX (6):

Incidentally, the Moving Picture Experts Group (MPEG) is well known as one of the methods of compression for motion images (video data). In the case where some additional information is put into an MPEG video bit stream, a method of hiding additional information into a user data field has generally been employed. In such a method, however, the field can be easily separated from the media data, so there is the problem that the detection and removal of additional hidden information are easy.

The examiner renders obvious conformance with the MPEG standard and the utilization of a USER DATA FIELD set forth for the same purpose obvious to those skilled in the art at the time of the invention to store scene change data, as desired.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

matter pertains. Patentability shall not be negated by the manner in which the invention was made. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1-3, 6-8, 10, 12-14, 50-54, 57-59, 67-73, 75-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiba et al. (US 5,614,960 in view of Morimoto et al. (US 6,005,643) and further in view of Takahashi et al. (US 5,537,528).

Regarding claims 1, 2-3, 6-7, 10, Chiba discloses and meets the limitations associated with processing a video stream received by the apparatus and associated method comprising the steps of:

- receiving a video stream, wherein the video stream comprises multiple frames (Fig. 9);
- analyzing the video stream to ID scene changes between frames and an encoder (Fig. 9, "19", Fig. 11, "32", Fig. 14 and/or Fig. 18, plural scene change, embodiments);
- marking one or more user or private data fields (Fig. 65, header area having, header fields) of one or more scene change frames of the video stream to indicate that a scene change occurs in the scene change frame (Figs. 41 A-B, field images, therefore, also frame images, Fig. 65) of the video stream (Fig. 20) and wherein the encoder is a compression encoder which compresses a stream into a file and for displaying scenes or segments (col. 17, lines 20-36, "adding a mark ... to corresponding image data ... image regeneration unit 97 ... extracting unit 98 for extracting

only image data provide with the mark signal ... by the image data replaying unit 96").

Further regarding claims 1, 3, 7 and 13, Chiba, creates an index (col. 21, Fig. 25, 140-F, frame numbers and number of scene changes), for the purpose of extracting and displaying or to provide an index of access points for displaying specific scenes or segments to identify scenes change point within a video stream (Fig. 29 A-B, by a file extraction tool) and is further deemed to read on marking fields of frames (Fig. 25, 140-F), of frames of a video and therefore, reads on updating at least a data bit in a field of a video frame (management data), to indicate a scene change and wherein the locations used to mark can be said to read on, "user or private fields".

Chiba is silent to detailed implementation and therefore, fails to anticipate the method processed by a computer, as recited in claim.

Morimoto teaches processing video in MPEG format associated CD-ROM media (col. 1) by a computer platform (col. 4, lines 39-49), as taught by Morimoto.

Therefore, it would have been obvious to those skilled in the art at the time of the invention to modify Chiba by

utilizing a computer platform to processing video in MPEG format as taught by Morimoto being a viable implementation having advantages of versatility such as editing video etc....

If it is argued that Chiba is deemed deficient for any reason the examiner provides an additional teaching in the alternative, the examiner cites Morimoto, discloses teachings in the art, see, "Background of the Invention", at col. 1, LINES 44-54, "MPEG is well known ... ***some additional information is put into an MPEG video bit-stream, a method of hiding additional information into a user data field.*** Therefore updating at least one bit, of a video frame (I, P, B types frames of an MPEG Video stream), area/field being a USER DATA field/area, has generally been employed for storing additional information. Which meets the limitation of as claimed, user or private data field/fields, to store additional information, of an MPEG compressed video stream of frames (I, P and B type frames).

The user data fields/areas, are within the frames, but, separate from the content (video), being an MPEG layer fields/areas, intended for holding/storing/carrying additional information, allowing for easy removal (col. 1, lines 50-52).

Morimoto describes that this type of embedding may be easily separated from the media, which to Morimoto is a problem that the detection and removal are easy and his invention, improves embedding to alleviate this issue (see below).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Chiba by incorporating marking fields/areas of an MPEG stream at the encoder, meeting the limitation of user or private type data fields of a frame thereby updating the stream with at least one marker bit, being a location to store additional data which is separate from the encoded content with the frames, as taught by Morimoto, as described in the background.

Using these areas, user data areas causes no degradation or to be in a manner transparent, when rendering video, as is obvious to those skilled in the art, which is deemed an obvious alternative based on the encoded data, such as MPEG encoded data, with respect to the video, to mark in user/private field of a video frame, to indicate scene changes, to later thereby, detect and render, for the purpose of identification of scene change point in an which can be used to extract and/or edit the material for various purposes, as is obvious to those skilled in the art.

Regarding claim 1 and related claims 7-8, 9, the prior art as applied fails to address the marking further including, "A TYPE of scene change" or an attribute indicating type of scene change.

Takahashi teaches detection of scene changes, having more than one TYPE or at least two, attribute information marking scene change points, including a type field 904 in Fig. 9, col. 9-10, scene change types represented by NORMAL and DISSOLVE types, represented in the table as, 1 and 2, defining the scene change type, as taught by Takahashi.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the prior art as

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applied above accordingly, by adding additional bits defining scene change types when detected by different scene change detectors by different detectors as taught by the prior art and Takahashi having advantages of defining by type scene changes allowing for a more details associated with scene change types, allowing for attribute consideration in the selection and editing, thereby by providing a higher level attribute information, enabling higher or more detailed levels of, image selection and editing operations possible, as is obvious to those skilled in the art.

Further regarding claim 8, as previously applied, claims 8 is addresses with respect to above, wherein the dissolve of a transition for cuts between scenes and meets the limitation of a cut detection/detector.

Claims 50-54, 57-59, 67-71, 75-76 are deemed analyzed and discussed with respect to the claims above.

Claim 55, 56, 63, 72, 73, 80, 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiba et al. (US 5,614,960 in view of Morimoto et al. (US 6,005,643) and further in view of Takahashi et al. (US 5,537,528) and further in view of Jasinschi et al. (US 6,748,158).

Regarding new claims 55-56, 58-59, 63-65, 72-73, 75-76, 80-82, the combination fails to particularly disclose:

- o wherein the scene change attributes identify that the scene change occurred due to a scan, tilt, zoom or cut

and

- o one or more additional data bits that represent an amount of change caused by the scene change

- o percentage of scene change and/or direction field and/or transition effect.

Jasinschi teaches the above in Figs. 2-5, being camera attributes, as taught by Jasinschi.

Therefore, it would have been obvious to those skilled in the art at the time of the invention to modify the combination by providing detection of various camera attributes for identification of camera attributes, as taught by Jasinski.

Regarding claims 63 and 80, the combination fails to address scene change percentage, but, does generate the magnitude, the examiner takes official notice that representing a value as a percentage in view of magnitude would have been an obvious conversion of magnitude representation, therefore it would have been obvious to generate percentage from magnitude, as is deemed an obvious representation of the data change or degree.

Claims 9, 11-13, 56, 58-60, 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Chiba et al. (US 5,614,660) in view of Morimoto et al. (US 6,005,643, "In an Alternative/ADDITION Rejection) and Takahashi et al. (US 5,537,528) and Jasinski et al. (US 6,748,158) and in view of Aotake (US 6,411,771).

Regarding claim 9, the combination as applied fails to address an attribute representing the amount a scene has changed.

Aotake teaches indicating an attribute representing the amount a scene has changed in relation to the corresponding scene change point indexed, as taught by Aotake.

It would have been obvious since Aotake generates the additional data for scene changes, wherein Chiba and Morimoto teaches embedding various additional information being different messages, as suggested by Morimoto, therefore, it would have been obvious to those skilled in the art at the time of the invention to utilize and embed additional data bits, as suggested by the combination of Morimoto and Aotake, to embed the generated data of Aotake in a field, as taught Morimoto representing additional bits generated by Aotake and/or to embed at least some additional data in to the field or more than one bit data, as is obvious to those skilled in the art with these references in front of themselves.

Further with respect to claim 8, the examiner has cited in the PTO-892, prior art, scene change detectors that detect camera motion attributes associated with scene changes, such as Tilt up/down, Zoom In/out, Dolly {Forward & Back}, Track left/right, Pan Left/Right even Roll, scene changes detected which are camera attributes.

Regarding claims 11-12, the combination with Aotake additionally renders obvious and meets the limitation of wherein a frame of the video file representing a scene change comprises a full frame, Figs. 21 & 24 rendered of or displayed full frames and a DELTA being a frame with large changes, represented by a high threshold, see Aotake (Fig. 19), Also Chiba.

Claim 13 is analyzed and discussed with respect to claim 9, further rendering obvious to scan the fields having amount of scene change attribute added thereto and to provide an extraction tool to select frame exceeding an amount of scene change (Aotake, cols. 45-46 and Fig. 19, "exceeding a predetermined threshold value be displayed on the source window 362. The threshold value is entered by the user"), as is deemed obvious to those skilled in the art.

Claims 56, 58-60, 73 are also deemed analyzed and discussed with respect to the claims above.

Claims 15, 49, 62, 66, 79 and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Chiba et al. (US 5,614,660) in view of Morimoto et al. (US 6,005,643) and Takahashi et al. (US 5,537,528) in view of Jasinschi et al. (US 6,748,158) and further in view of Tonomura et al. (US 6,571,054)

Regarding claims 15, 60-62, 66, 77-79 and 83 the combination as applied fails to disclose generating a storybook or index of access points, with the extracted frames.

Tonomura teaches at col. 3, "automatically creates a book like electronic book by a procedure of analyzing a video sequence to detect various events such as a scene change" and col. 10, lines 58-, "Items that can be placed in page are every kind of data that can be managed by a computer, such as text, images, representing images linked to a video and sound data. All the items that are carried on the electronic image book are items numbers for identification ...", as taught by Tonomura.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the combination by utilizing the scene change frames and creating automatically creating an electronic image book, wherein the book can have text, therefore, a story book with extracted scene change images, as taught by Tonomura.

Contact Information

Any inquiry concerning this communication or earlier communications should be directed to the examiner of record Vincent F. Boccio whose telephone number is (571) 272-7373.

The examiner can normally be reached on between Monday-Thursday between (7:30 AM to 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ali, can be reached on (571) 272-4105.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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"<http://portal.uspto.gov/external/portal/pair>"

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If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vincent F. Boccio/
Primary Examiner